

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 36

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER O. REKOW, THOMAS W. HOLMQUIST-BROWN, DAVID L. BRAUN and
VAUGHN B. GRANNIS

Appeal No. 1997-1155
Application No. 08/376,199

ON BRIEF

Before COHEN, McQUADE, and BAHR, Administrative Patent Judges.
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1-14, 16, 19-27 and 29, as amended (Paper No. 12) subsequent to the final rejection. Claims 18 and 28 were canceled subsequent to the final rejection (see Paper No. 12), claims 15 and 17 stand allowed and claims 30-34 stand withdrawn from further consideration under 37 CFR

§ 1.142(b) as being directed to a non-elected invention. No other claims remain pending in this application.¹

BACKGROUND

The appellants' invention relates to a respirator (claims 1-14, 16 and 19-26) that has a compressible press fit filter element (specification, page 1) and a method of replacing a compressible press fit filter element (claims 27 and 29). An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Gordon	1,499,864	Jul. 1, 1924
Tayebi	4,856,508	Aug. 15, 1989
Forsgren	5,222,488	Jun. 29, 1993
Jeffery et al. (Jeffery)	5,290,502	Mar. 1, 1994
Lehman	5,390,668	Feb. 21, 1995 (filed Jun. 22, 1993)

The following rejections are before us for review.

1. Claims 1-14 and 21-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Tayebi in view of Gordon.

¹ A communication from appellants filed May 4, 2000 in further support of the supplemental information disclosure statement filed November 1, 1999 has been entered in the application file. However, in the interest of judicial efficiency, consideration of this communication by the examiner has been held in abeyance pending decision on this appeal.

2. Claim 16 stands rejected under 35 U.S.C. § 103 as being unpatentable over Tayebi in view of Gordon and Lehman.

3. Claims 19, 20, 24 and 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Tayebi in view of Gordon and Jeffery.

4. Claims 26, 27 and 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Tayebi in view of Gordon, Jeffery and Forsgren.

Reference is made to the brief (Paper No. 15) and the answer (Paper No. 16) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Independent claim 1 requires, inter alia, "a compressible sorbent filter element that comprises sorbent granules united in the form of a compressible porous unified body and that has first and second faces separated by a peripheral surface" and a filter element retainer including a wall that frictionally engages the peripheral surface of the filter element to compress

the filter element to provide a hermetic seal. We also note that the term "compressible" is defined on page 6 of the appellants' specification² as follows:

the term "compressible" means the cross-sectional area of the filter element (normal to the direction of fluid flow) is reduced more than the retainer's cross-sectional area (defined by the interior side of the wall of the filter element retainer) is expanded when the filter element is inserted therein. In other words, the wall **26** is more rigid than the filter element.

Tayebi (Figure 3) discloses a face mask or respirator comprising a filter 17 of a fibrous material impregnated with activated charcoal. The filter is sufficiently flexible that it conforms to the inside of the central portion of a mask shell 11. A snap-in retainer 19, shown in Figures 3 and 4, molded of a flexible thermoplastic material that can bend as it is inserted into the interior of the mask shell 11 snaps into a groove around the interior of the mask shell 11 to retain the filter 17 inside the mask shell 11. On assembly, the retainer 19 also deforms to match the contour of the inside of the mask shell 11 (column 10, lines 38-59). While it is clear from Tayebi's disclosure that both the filter and the retainer 19 are flexible, there is no indication as to whether the filter 17 is more or less rigid than the retainer 19 or whether the filter 17 is compressed such that its cross-sectional area normal to the direction of fluid flow is reduced at all or whether the retainer's cross-sectional area is expanded upon insertion of the filter in the retainer.

² An applicant can be his own lexicographer provided the applicant's definition, to the extent it differs from the conventional definition, is clearly set forth in the specification. Beachcombers Int'l, Inc. v. WildeWood Creative Prods., Inc., 31 F.3d 1154, 1158, 31 USPQ2d 1653, 1656 (Fed. Cir. 1994).

In the embodiment of Figure 8, which was specifically referred to by the examiner in making the rejection (final rejection, page 2), Tayebi discloses a face mask comprising a foam shell 11 having a hole 37 into which a collar 38 is thermobonded, friction snap-fit or adhesive bonded. A cartridge filter 40 "of the type well known in the art" is inserted into a passage 39 of the collar 38, where it is retained in a relatively tight friction fit so as to form a joint through which no unfiltered air can pass (column 13, lines 9-19). Although the sectioning of the collar 38 shown in Figure 8 appears to indicate that the collar is made of a synthetic resin or plastic, Tayebi does not further specify the material of the collar 38 or indicate whether it is at all flexible or compressible. While one of ordinary skill in the art would probably infer that one of the cartridge filter 40 and collar 38 deforms at least to some degree so as to form an air-tight joint therebetween, there is no indication that the filter element of the cartridge filter 40 is compressible at all, let alone more compressible than the collar 38, as required by claim 1.

Gordon teaches the use of a shell 1 to retain a pair of sponge rubber filters 11, 12 in an air cleaner for an internal combustion engine. Gordon teaches that the filter beds are slightly greater in diameter than the band so that the filters become outwardly bowed, as shown in Figure 3, when they are inserted into the retainer. According to the examiner, it would have been obvious to one of ordinary skill in the art to provide the Tayebi device with such a means

of securing the filter element in a casing as taught by Gordon as such would only entail the substitution of one securing means for another (final rejection, pages 2 and 3).

While the appellants do not dispute that the compressible sorbent filter material used in their invention is a known material for use in respirators (see appellants' specification, page 9), there is no suggestion in the prior art applied by the examiner in rejecting the claims to utilize the compressibility of such filter material by inserting it into a more rigid (or less compressible) retainer to form an air-tight seal with the retainer wherein the filter material is compressed upon insertion of the filter into the retainer, as called for in independent claim 1. Looking first to the teachings of Tayebi, even if the flexible filter material 17 does comprise sorbent granules united in the form of a porous unified body as required by claim 1, Tayebi, as discussed above, provides no teaching or suggestion that the filter element is compressible and compressed in the direction normal to fluid flow when inserted within the retainer 19 in the Figure 3 embodiment or when the cartridge is inserted within the collar 38 in the Figure 8 embodiment or that the filter would be capable of achieving acceptable filtering if so compressed. Gordon, on the other hand, evidences that it is known in the filter art to retain a sponge rubber filter element in a shell such that the sponge rubber filter is compressed in the direction normal to fluid flow so that it bows outwardly. As the teachings of Gordon are directed to a sponge rubber filter element and not to a filter comprising sorbent granules united in the form of a porous unified body as required by claim 1, we agree with the appellants that Gordon, even if combined with

the teachings of Tayebi, would not have suggested retention of a filter element comprising sorbent granules united in the form of a porous unified body in the manner taught by Gordon to arrive at the subject matter of claim 1.

For the foregoing reasons, we shall not sustain the examiner's rejection of independent claim 1 or claims 2-14 and 21-23 which depend therefrom.

Turning next to the examiner's rejection of claim 16, which depends from claim 1 and additionally requires that the filter element include a tab for facilitating manual removal of the filter element from the retainer, we have reviewed the additional teachings of Lehman but find nothing therein which overcomes the above-noted deficiency of the combination of Tayebi and Gordon. It follows then that we shall also not sustain the examiner's rejection of claim 16 as being unpatentable over Tayebi in view of Gordon and Lehman.

With regard to the examiner's rejection of claims 19, 20, 24 and 25 as being unpatentable over Tayebi in view of Gordon and Jeffery, we note that Jeffery discloses a method of making a rigidized fiber filter element which does not require a cage, ring or other fabric support hardware (column 1, lines 9-12). The filter element is prepared from a mixture of high-shrink polyester fiber and a polyester binder fiber in which particles of activated carbon may be incorporated to remove toxic gases (column 4, lines 43-68). Jeffery does not provide any suggestion to insert such rigidized structures within a retainer such that they are compressed in a direction normal to the fluid flow direction and, thus, does nothing to

overcome the above-noted deficiency of the combination of Tayebi and Gordon. Accordingly, we also shall not sustain the examiner's rejection of claims 19, 20, 24 and 25, which depend from claim 1, as being unpatentable over Tayebi in view of Gordon and Jeffery.

Turning finally to the examiner's rejection of claims 26, 27 and 29 as being unpatentable over Tayebi in view of Gordon, Jeffery and Forsgren, we have reviewed the teachings of Forsgren and find nothing therein which overcomes the above-noted deficiency of the combination of Tayebi, Gordon and Jeffery. Accordingly, we shall not sustain the examiner's rejection of claim 26, which depends from claim 1. Claims 27 and 29 are directed to the method of replacing a first compressible filter element with a second compressible filter element, wherein each of the filter elements includes a sorbent filter that comprises sorbent granules that are united together in the form of a compressible porous unified body. The claimed method requires a step of inserting the second compressible filter element into a retainer with the filter element being compressed upon insertion into the retainer to make an airtight fit with the retainer. As none of the references applied by the examiner provides a suggestion to insert a compressible sorbent filter comprising sorbent granules that are united together in the form of a compressible porous unified body into a retainer such that it is compressed upon insertion, we shall also not sustain the examiner's rejection of claims 27 and 29.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-14, 16, 19-27 and 29 under 35 U.S.C. § 103 is reversed.

REVERSED

IRWIN CHARLES COHEN
Administrative Patent Judge

JOHN P. McQUADE
Administrative Patent Judge

JENNIFER D. BAHR
Administrative Patent Judge

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Appeal No. 1997-1155
Application No. 08/376,199

Page 10

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